

WHAT IS CLAIMED IS:

1. A device for the direct or indirect application of liquid or viscous coating medium onto a moving application surface, in the direct application the application surface is a surface of a material web, in the indirect application the application surface is a surface of a transfer element, which transfers the coating medium to the surface of the material web, said application

5 surface including a direction of travel, said device comprising:

an applicator; and

a weakening device located prior to said applicator as viewed in the direction of travel, said weakening device for weakening a boundary layer of air carried along by the application surface, said weakening device including:

10 a blowing device located prior to said applicator as viewed in the direction of travel, said blowing device producing an air flow in an opposite direction to the direction of travel; and

a suction device being located prior to said blowing device as viewed in the direction of travel, said suction device suctioning both at least a part of said air flow and at least 15 a part of said boundary layer of air.

2. The device of claim 1, wherein said material web is one of a paper web and a cardboard web.

3. The device of claim 1, wherein said transfer element is a transfer roll.

4. The device of claim 1, wherein said blowing device includes a blow box, said application surface includes a first lateral edge and a second lateral edge, said blow box supplied with air in both an area of said first lateral edge and an area of said second lateral edge.

5. The device of claim 1, wherein said suction device includes a suction box, said application surface includes a first lateral edge and a second lateral edge, air is exhausted from said suction box in one of an area of said first lateral edge and an area of said second lateral edge.

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6. The device of claim 5, wherein said suction box includes a drive side edge, air is exhausted from said suction box in an area of said drive side edge.

7. The device of claim 1, wherein said blowing device includes an end facing said applicator as viewed in the direction of travel, said end is located at a distance of between approximately 10 mm and 50 mm from a point of contact of the coating medium on the application surface.

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8. The device of claim 1, wherein said blowing device includes a baffle located at a predetermined distance from the application surface.

9. The device of claim 8, wherein said baffle includes a length subtending at least part of the application surface, said length between approximately 300 mm and 500 mm as viewed in the direction of travel.

10. The device of claim 8, wherein said suction device faces one of an end of said baffle and said blowing device as viewed in the direction of travel, said suction device is located at a distance of between approximately 0 mm and 50 mm as viewed in the direction of travel from one of an end of said baffle and said blowing device.

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11. The device of claim 1, wherein said blowing device includes a blow nozzle with one of a slotted nozzle and a multitude of individual nozzles.

12. The device of claim 1, further including a conditioning device being located prior to said weakening device as viewed in the direction of travel, said conditioning device essentially removes a plurality of uppermost layers of said boundary layer of air.

13. The device of claim 12, wherein said conditioning device includes a strip that extends in a transverse direction to the application surface.

14. The device of claim 12, wherein said conditioning device is located at a distance of between approximately 3 mm and 10 mm from the application surface.

15. The device of claim 1, wherein said application surface includes an area subtended by said weakening device, said area of said application surface takes on a curved progression.

16. The device of claim 15, wherein said area of said application surface includes at least one of a support roll, a support belt and a support shoe, the material web is routed around at least one of said support roll, said support belt and said support shoe.

17. The device of claim 15, wherein said curved progression includes a curvature radius between approximately 300 mm and 500 mm.

18. The device of claim 1, wherein said blowing device includes a blow nozzle, said application surface includes an area of one of said blow nozzle and immediately prior to said blow nozzle, said area of said application surface takes on a curved progression.

19. The device of claim 1, wherein said application surface is fed from below a point of contact of the coating medium on the application surface to said point of contact of the coating medium on the application surface.